

CLAIMS:

1. A method for drilling a bore through a target comprising the steps of:
 - 5 advancing a drill bit into said target along a direction of advancement; and
 injecting a directing gas in the direction of advancement through at least one aperture in said drill bit; whereby
 - 10 as said bore is drilled waste material is directed in the direction of advancement via said gas.
2. The method as claimed in claim 1 wherein at least one cutting element of said drill bit defines an internal
15 diameter of said bore developed in said target as said bit advances.
3. The method as claimed in claim 2 further comprising the steps of:
 - 20 providing a ready made bore having an existing diameter less than said internal diameter in said target; and
 directing waste material along said ready made bore during said step of advancing said drill bit.
 - 25
4. The method as claimed in claim 1 wherein substantially all of said waste material is directed in the direction of advancement.
- 30 5. The method as claimed in claim 1 wherein said method for drilling comprises a method for dry drilling.

6. The method as claimed in claim 1 wherein said method comprises a method for simultaneously drilling through at least two different materials.

5 7. The method as claimed in claim 1 wherein said target comprises a wall composed of a first material and a pipe composed of a different material extending through said wall, the internal bore of said pipe defining a ready made bore along which said drill bit is advanced.

10

8. The method as claimed in claim 1 further comprising the steps of:

selecting the dimensions of said drill tip for providing consistent particle size, having a largest
15 cross-section below a predetermined threshold limit, of ejected waste material.

9. A drill bit for drilling a bore through a target via a drilling process, comprising:

20 at least one cutting element arranged to cut a bore having an internal diameter through said target as said drill bit advances into said target; and

at least one aperture in said drill bit for permitting a directing gas to be injected in a direction
25 of advancement of said drill bit to thereby direct waste material, formed as said bore is drilled, in said direction of advancement.

10. The drill bit as claimed in claim 9 wherein said
30 cutting element is arranged for cutting a bore having an internal diameter wider than an existing bore in said target and along which said drill bit is advanced.

11. The drill bit as claimed in claim 9 or claim 10 further comprising a drill tip including said cutting surface and a shaft portion for connecting said drill tip to a drill device.

5

12. The drill bit as claimed in claim 9 further comprising a pilot tip, having an outer diameter arranged to closely match an internal diameter of a ready made bore formed in said target, extending from a body portion of said drill bit.

10

13. The drill bit as claimed in claim 12 wherein said pilot tip is disposed at a forward end region of said body portion of said drill bit.

15

14. The drill bit as claimed in any one of claims 9 to 13 further comprising at least one chip breaker tip disposed at a forward region of a body portion of said drill bit.

20

15. The drill bit as claimed in any one of claims 9 to 14 further comprising:

at least one air passage extending longitudinally through said drill bit for providing a route for gas to flow along from a rear portion of said drill bit to said at least one aperture.

25

16. The drill bit as claimed in claim 11 wherein said shaft portion comprises a cylindrical shell body portion and includes at least one further aperture therein, for providing a route for gas to flow from an internal region of said cylindrical shell to an external region formed between the outer diameter of said cylindrical shell and the inner diameter of said drilled bore.

30

17. The drill bit as claimed in claim 11 further comprising:

5 connecting means on at least one of a rear portion of said drill tip and/or a forward region of said shaft portion for securably connecting said tip and shaft portion together.

18. A drill, for use with a drill bit arranged for
10 drilling a bore through a target, comprising:

a rotor shaft arranged to rotate when driven;

a motor arranged to drive said shaft;

connection means for connecting said drill bit to
said rotor shaft;

15 a gas inlet arranged to receive pressurised gas from a pressurised gas source; and

gas directing means arranged to inject gas from the inlet to said drill bit thereby providing a directing gas flow in a direction of advancement as said drill bit
20 drills said bore.

19. A method substantially as hereinbefore described with reference to the accompanying drawings.

25 20. Apparatus constructed and arranged substantially as hereinbefore described with reference to the accompanying drawings.